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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/555,323

11/02/2005

Jun-Seok Heo

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CLARK & ELBING LLP
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BOSTON, MA 02110

EXAMINER

EIDE, HEIDI MARIE

ART UNIT

PAPER NUMBER

3732

NOTIFICATION DATE

DELIVERY MODE

12/05/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentadministrator@clarkelbing.com

Office Action Summary	Application No. 10/555,323	Applicant(s) HEO, JUN-SEOK	
	Examiner HEIDI M. EIDE	Art Unit 3732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on November 2, 2005 is noted. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fenick 5,015,183 in view of Klein et al. 5,967,777 (Klein).

3. Re claim 1, Fenick teaches a method of producing a stent for guiding the location/direction for the insertion of an implant comprising the steps of forming a plaster cast modeling of a mouth state using a plastic replica, manufacturing a plastic cast model having an occlusal surface of the location for the insertion of the implant using the plaster cast (col. 4, ll. 46-50), fastening a plastic plate 42 having on corners thereof a plurality of metal markers 41A-41F to an upper end of the plastic cast model 40 (col. 5, ll. 17-19) and obtaining an image of the mouth after placing the plastic cast model, on which the plastic plate is fastened, in the mouth (col. 5, ll. 23-35) and forming a hole on a predetermined position in the stent to correspond to both a location and a direction for the insertion of the implant determined by a dentist base on the image (col. 5, ll. 66-68,

col. 6, ll. 1-5). Fenick does not teach the metal markers attached to the plate being in the shape of balls, however, it has been held that the configuration of the claimed markers was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed markers was significant (*In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) MPEP 2144.04 IV B). Fenick does not specifically teach the method includes CT images. Klein teaches the method using CT images (see abstract). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Fenick in view of Klein in order to obtain a 3-D image of the jaw in order to more accurately place the implant.

4. Re claim 2, Fenick teaches the method of producing the stent for guiding the location/direction for the insertion of the implant wherein the determination of the location and direction for the insertion of the implant depends on a spatial positional relationship between the metal markers displayed in the image (col. 5, ll. 40-44).

5. Re claim 3, Fenick teaches the method of producing the stent for guiding the location/direction for the insertion of the implant wherein the metal markers comprise at least three metal markers (col. 5, ll. 8-10).

6. Re claim 4, Fenick does not teach the method of producing the stent for guiding the location/direction for the insertion of the implant further comprising a step of forming an implant guide hole on the plastic cast model on which the plastic plate is fastened according to the predetermined location and direction, but does teach forming an implant guide hole on a cast model according to the predetermined location and

direction (col. 5, ll. 66-68, col. 6, ll. 1-5). Klein teaches the method of producing the stent for guiding the location/direction for the insertion of the implant further comprising a step of forming an implant guide hole on the plastic cast model on which the plastic plate is fastened according to the predetermined location and direction (col. 9, ll. 4-13). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Fenick in view of Klein in order to reduce the number of casts needed for to perform the method.

7. Re claim 5, Fenick teaches the method of producing the stent for guiding the location/direction for the insertion of the implant wherein the determination of the location and direction for the insertion of the implant comprises the steps of determining position of the metal markers from the obtained image, defining a plane provided by the metal markers using the position of the metal markers and calculating a relationship between the defined plane and an imaginary implant (col. 5, ll. 36-53).

8. Re claim 6, Fenick teaches a stent 29 for guiding the location/direction for the insertion of an implant produced by the method discussed above.

9. Claims 7-10 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Klein et al. 5,967,777 (Klein).

10. Re claim 7, Klein teaches a stent for guiding the location/direction for the insertion of an implant comprising a plastic cast model 30 having an occlusal surface of a predetermined portion into which the implant is inserted (col. 7, ll. 33-35), a plastic plate 40 having at least three metal markers 70 and attached to the plastic cast model to be parallel with each other (col. 7, ll. 46-47, col. 8, ll. 13-21) and an implant guide hole

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formed on a predetermined position of the plastic cast model corresponding to a hole determined according to a predetermined algorithm (col. 9, ll. 4-15). Klein does not teach the metal markers being in the shape of balls, however, it has been held that the configuration of the claimed markers was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed markers was significant (*In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) MPEP 2144.04 IV B).

11. Re claim 8, Klein teaches the stent for guiding the location/direction for the insertion of an implant wherein the predetermined algorithm comprises the steps of determining positions of the metal markers from an obtained computed tomographic (CT) image, defining a plane provided by the metal markers respectively and calculating a relationship between the defined plane and an imaginary implant (col. 8, ll. 58-63).

12. Re claim 9, Klein teaches a method for determining a position of a guide hole of a stent comprising the steps of obtaining a computed tomographic (CT) image of a mouth after placing the stent in the mouth (col. 3, ll. 50-52), determining positions of the metal markers from the obtained CT image, defining a plane provided by the metal markers using the position of the metal markers respectively and calculating a relationship between the defined plane and an imaginary implant (col. 8, ll. 58-63).

13. Re claim 10, Klein does not specifically teach the method wherein the determination of the positions of the metal balls comprises the steps of giving a number to each of the metal balls, defining a line, connecting metal ball number one to metal ball number two as an X-axis and defining another line, connecting metal ball number

one to metal ball number three as a Y-axis confirming whether an angle between the two lines is perpendicular and determining the positions of the metal balls to be in error if the angle between the two lines is not perpendicular and defining a Z-axis by finding a vector product of the X-axis and the Y-axis if the angle between the two lines is perpendicular and measuring an insertion depth of the implant based on the plane defined by the metal balls and finding an intersection point between an extension line of the implant and a plane formed by the X-axis and the Y-axis, however, it would have been an obvious matter of choice in known mathematical techniques to determine the position of the metal balls.

Response to Arguments

Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

14. Applicant further argues that the method taught by Fenick teaches the drilling direction in the reverse and the plastic plate is plain, however, applicant does not claim these limitations to differentiate between the prior art therefore these arguments are not persuasive. In regard to the applicant's argument regarding claim 4, the applicant is arguing limitations not claimed. The claimed limitation of forming an implant guide hole of the plastic cast model on which the plastic plate is fastened is met by the prior art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HEIDI M. EIDE whose telephone number is (571)270-3081. The examiner can normally be reached on Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cris Rodriguez can be reached on 571-272-4964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Heidi Eide
Examiner
Art Unit 3732

/John J Wilson/
Primary Examiner
Art Unit 3732

/Heidi M Eide/
Examiner, Art Unit 3732
12/1/2008